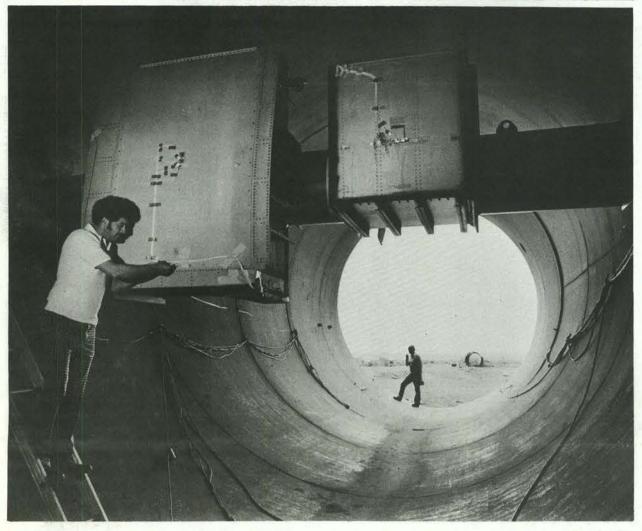
LAB NEWS

VOL. 28, NO. 7

APRIL 2, 1976

SANDIA LABORATORIES . ALBUQUERQUE NEW MEXICO . LIVERMORE CALIFORNIA . TONOPAH NEVADA



B-1 BOMBER SEGMENTS are shown in place for testing in the Thunderwell shock tube. Manny Vigil (9335), project engineer, checks instrumentation.

Sandia Tests B-1 Bomber Segments In Thunderwell Shock Tube Facility

Under a reimbursable contract with the Air Force and Rockwell International, Sandia Labs is testing segments of the B-1 bomber in the Thunderwell Shock Tube Facility in Coyote Test Field.

The avionics bay door and the crew module side wall were successfully tested last week in the 305 ft. (93 metres) shock tube. Five pounds of HE detonated at one end of the tube delivered a low overpressure wave for 100 milliseconds to the test segments.

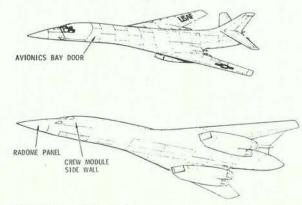
Project engineer Manny Vigil of Coyote Test and Track Division 9335 reports that the test simulated a distant nuclear blast. Next week in the final test, the B-1 radome panel or nose of the aircraft will be subjected to the same forces.

Observers at the test last week included officials of the Air Force, Rockwell International and Boeing Aircraft.

Boeing has scheduled a series of 90 similar shock tube tests with Sandia starting in May. The Thunderwell facility with its extreme length and nearly 6-metre diameter test section is the largest of its kind in the country.

Manny says that the low-level, longduration shock wave for the B-l tests is not typical of the kinds of pressure waves usually created at the test facility. "Normally," he says, "we work with pressure waves around 70 psi with a short — 30 milliseconds — duration."

Tom Witherspoon (9535) was responsible for instrumenting and recording the B-1 tests, A.C. Carabajal and Walt Drake (both 9335) performed arming and firing. Frank Hensley and Sonny Holland of Photometrics Division 9412 performed documentary photography. Gary Laabs (9335) was responsible for test fixtures and installation.



DRAWING of the B-1 bomber shows location of the avionics bay door, radome panel and crew module side wall undergoing tests in Sandia's Thunderwell shock tube facility.

The Army, Ms. Jones

Sandians Find Soldiering Congenial

They're not B-17'ers nor submariners nor WWII veterans. They're Sandians and they're members of the 156th Support Group of the U.S. Army Reserve. Margie Rico (4231), Mary Abeita (9653) and Lou Tidwell (9550) joined the Reserve in 1974 under the Civilian Acquired Skills Program, which allows a reservist to use civilian training and experience as a substitute for much of the special military training.

The three women had their basic training at Ft. McClellan, Ala. "It was a hectic time," recalls Margie. "We were up at five and it was lights out at nine, with absolutely no time to ourselves in between." In addition to learning about military dress and marching, they attended classes in first aid; chemical, biological and radiological warfare; military courtesy and customs; history of the Army; and drill and ceremonies.

Headquarters for the 156th is located on KAFB East, and one weekend a month the 165-member unit reports for duty. "Our day starts at 7:30 a.m. with formation and roll call," Mary says, "then we each report to our duty station." Mary is a Specialist 4 clerk typist assigned to the Installations group in a Drafting Section. Margie, a Specialist 5, is assigned to the Administrations Section as a publications specialist. Lou is a Specialist 5 intelligence analyst in Security Planning Operations of the Intelligence Section.

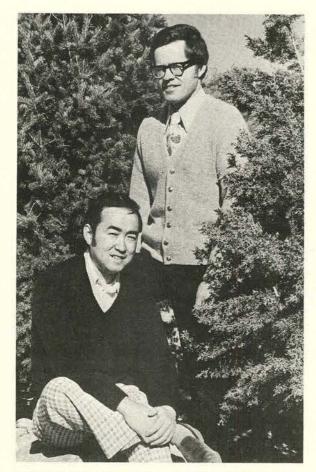
On the second day of their weekend duty, they report for formation, attend church services if they wish, and spend the balance of the day attending orientation classes or receiving some type of instruction.

"We do have occasional field exercises," Lou says, "where we spend a weekend in the mountains. On our last field training exercise, a special forces group on base acted as the aggressors. Our unit is a logistics support group so we set up camp in a rear area. We had the usual drill of pitching tents, digging fox holes, setting up communications and standing guard duty. We have about 20

(Continued on Page Four)



MARY ABEITA (9653) listened to that man in the background. "For part time work, it's great," she says. "The work is varied — unusual at times — the pay is good and the promotion rate is good."



DENNIS MIYOSHI (9425) and KEN HESSEL (2542).

Supervisory Appointments

KEN HESSEL to supervisor of Optoelectronics Division 2542, effective April 1. Ken joined the Laboratories in July 1969 as a staff member in the optics instrumentation group. His work with this organization has been in the area of coherent optics, and optical instrumentation and information processing.

Before coming to Sandia Ken attended the University of Texas where he earned his BS, MS and PhD in electrical engineering. He is a member of IEEE and the Optical Society of America. His leisure time activities are sports oriented and he particularly enjoys tennis, skiing and hiking. Ken lives at 12113 Prospect NE.

DENNIS MIYOSHI to supervisor of Special Projects Division 9425, effective March 16. Since joining the Labs in February 1969 as a staff member in the Instruments and Sensors group, Dennis's work has been mainly in the development of instrumentation for underwater applications and for use in



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lorena schneider reports on livermore

Afterthoughts

Which paper do you read?--Last Sunday's Journal carried an interview with Morgan Sparks which may have caused confusion among Sandia readers who had earlier read our state-of-the-Labs interview (LAB NEWS, Feb. 6). If there is a central message in the LAB NEWS interview, it is that Sandia is a weapons laboratory and no alteration in this mission is foreseen. We do other things--energy projects most notably and noticeably--but weapons clearly are the mainstream activity. The Journal article flipped the priorities the Labs attaches to weapons and energy, creating some consternation in our executive offices.

* * +

"Uranium places much less strain on the logistics of mining and transportation. A power plant producing 1000 megawatts of electricity requires the handling of only about 30 tons of uranium fuel per year, whereas 3 million tons of coal and about 300,000 tons of ash have to be handled annually at the same size coal-fired plant." Edward Mason, NRC Commissioner, in speech on future of nuclear power.

Solzhenitsyn--"Détente is necessary, but détente with open hands: Show there is no stone in your hands. But your partners with whom you are conducting détente have a stone in their hands, and it is so heavy that it could kill you with one single blow. Détente becomes self-deception. That's what it is all about."

* * ;

Signs of the times--The people at the Base Gym are especially fond of signs, and their latest, just inside the entry, really makes you stop and think: "Smoking Drinking Food Not Permitted." *js

upper atmospheric studies, systems analysis, security systems and studies of bioluminescence. His new responsibilities entail work with the plutonium storage facility at Hanford, Wash.

Dennis received a BS in physics from Stanford and PhD in physics from Cornell. He is a member of the American Physical Society. Off the job he enjoys working on his cars and around the house, gardening and playing the guitar. Dennis and his wife Geri have two daughters and live at 9817 Dorothy Place NE.

JAKE DEVARGAS to supervisor of Organizational Budget Division 3241, effective March 16. After receiving his BBA degree from UNM in 1955, Jake joined Sandia's cost accounting organization. A year later he took a military leave of absence and served for three years in the Air Force. Since returning to the Labs in 1960, Jake has been in the computing directorate as a program analyst. The primary responsibility in his new position will be development of operating budgets for each line organization.

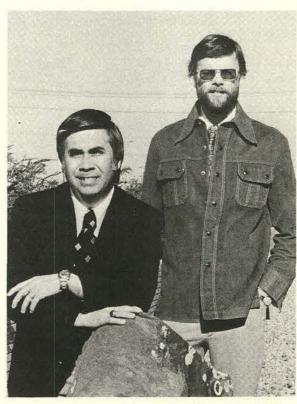
Off the job, Jake is actively involved with Little League baseball; he also enjoys fishing. Jake and his wife Cipy have five children and live at 1851 Betts NE.

TED SCHMIDT to supervisor of Reactor Source Applications Division 5421, effective April 1. Ted worked at the Labs during 1964-65 as a classification analyst, and then left to complete his education. Since his return to Sandia in 1969 his work has been with reactor studies organizations. He worked on the design of SPR III, has made property determinations of fissile materials and, most

recently, has studied fast reactor safety. His new responsibilities will include examination of potential uses of reactors.

Ted earned a BS in EE and MS and PhD in nuclear engineering, all from the University of Arizona. He was an officer in the U.S. Army, stationed at Sandia Base with the Atomic Weapons Training Group, from 1961-64.

Ted is a member of the American Nuclear Society. He's a squash player and a novice skier and enjoys working on a number of home projects. Ted, his wife Janice and their three children live at 3626 Vista Grande NW.



Jake DeVargas (3241) and Ted Schmidt (5421)

Supervisory Appointment

Al Jones to supervisor of Analytical Mechanics Division 8115, effective March 1.

Since joining Sandia in August 1970, Al's responsibilities in the Experimental Mechanics Division have primarily involved fracture studies of metal parts composed of high strength



materials. Previously, he worked with the math research group at the Naval Weapons Center, China Lake, Calif.

Al has BS and MS degrees in civil engineering from the University of Nevada and a PhD in mechanical engineering from UC/Davis which he received in 1969 under a National Science Foundation grant. A member of the National Society of Professional Engineers, Al's outside interests include alpine and nordic skiing, backpacking and bicycling.

He, his wife Lolly and their two children live on Sandra Way in Livermore.

Take Note

Mark your calendar for this Sunday, the day the bicentennial Juan Bautista deAnza expedition that left Mexico last year arrives in Livermore, marking the 200th anniversary of deAnza's Livermore visit, April 4, 1776. The original expedition established that California was not an island and initiated the Mexican colonization of California.

According to Dave Abrahams (8413), publicity chairman for the Livermore Bicentennial Organization, deAnza's second arrival on Sunday will be celebrated with a fiesta at the Livermore Barn from 12 noon to 9 p.m. Bring the whole family and enjoy the mariachi music, Spanish dancing, games, and Mexican and American food.

Mel LaGasca (8411) has been appointed a voting member of the Social Concerns Committee by the City Council of Livermore to complete an unexpired term ending in June 1977. Composed of citizens who have been active in various civic groups, the committee is responsible for advising the Council on the social needs, priorities and services of the community. Mel has been a member of Concerned Minority Citizens of Livermore (CMCL) for the past six years and an alternate on the Social Concerns Committee since last July.

Speakers

Bill Wilson (8341), "Theoretical Description of Hydrogen and Helium Diffusion in Titanium Tritide"; Harry Saxton and Anton West (both 8314), "New Method for Long Term Slow Crack Growth Testing in Hydrogen"; Anton West and John Brooks (both 8314), "Hydrogen Compatibility of 304L Stainless Steel Welds"; and Ben Odegard, John Brooks and Anton West (all 8314), "The Effect of Hydrogen on the Mechanical Behavior of Nitrogen Strengthened Stainless Steel." International Conference on Hydrogen in Metals, sponsored by the American Institute of Metallurgical Engineers, Sept. 7-11, Moran, Wyo.

Sheridan Johnston (8115) and Lutz Dahlke (8344), "Neutron Radiography—A New Flow Diagnosite Technique," Sixth International Congress on Instrumentation in Aerospace Simulation Facilities, Sept. 22-24, Ottawa, Canada.

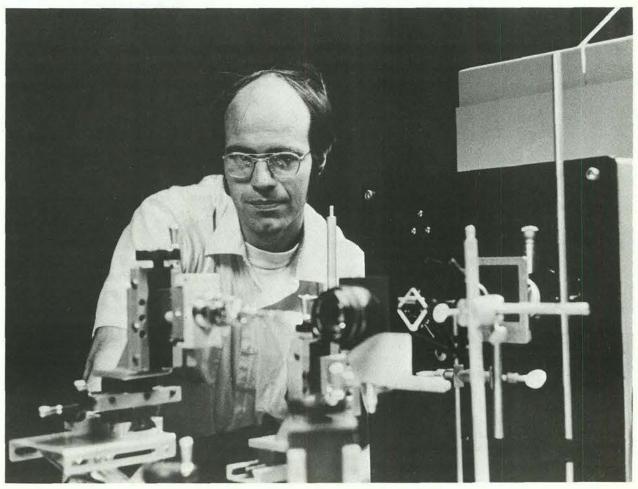
Marlin Pound (8214), "Local Government and How to Work Effectively with Your Elected Official," Civics Class, Livermore High School, Oct. 16.

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CHUCK HARTWIG, principal investigator involved with Raman spectroscopy studies, and some of the equipment needed to produce the Raman effect.

Glass: A New Application For Raman Spectroscopy

Gases in glass is the subject of a unique application of Raman spectroscopy used by Charles Hartwig of Device Studies Division 8342. His primary interest has been the interaction of gaseous hydrogen with vitreous silicas (glasses made from silica alone). "Raman spectroscopy is a very useful tool for studying glass," Chuck states. "By probing the atomic vibrations of the glass network and of dissolved gases, Raman scattering yields information about the types and concentration of gases and about impurities and lattice defects that might be present."

Raman spectroscopy, known to physicists since the 30's, has been widely used to study physical phenomena such as magnons and solid state phase transitions. The principle underlying Raman spectroscopy is that a light beam can be amplitude modulated by a time-varying index of refraction. The index variations are produced by thermally driven vibrations of the atoms. The modulation results in scattered light signals which are characteristic of the different vibrations.

One aspect of Chuck's research, being performed with Stewart Keeton (8341) and Jim Shelby (8334), involves understanding the dissolution of gas in silica. The Raman data has conclusively shown that hydrogen dissolves in glass molecularly, not atomically as in metals. The researchers have also measured the solubility of hydrogen as a function of temperature and pressure, and they have determined the diffusion constants of the gas. Further, they have used the Raman spectra obtained from the dissolved gas as a means to probe the microstructure of silica.

Features such as the concentration and size of interstices in the glass were deduced from the data.

Studies now in progress should permit the researchers to understand the mechanisms for producing hydroxl (OH) impurities in glass. Their experiments examine OH growth in various environments such as at high temperatures, under irradiation, and during silica manufacture. The results give information about both the mechanisms of OH formation and the microstructure of the OH defects. For instance, in some cases only one OH is formed at each lattice while in other cases several OH's appear to bond at each site

"Raman spectroscopy is ideal for this kind of research," says Chuck. "First, it perturbs the system under study only minimally since only light beams interact with the sample. Second, complex sample geometries like spheres and triangles can be readily studied. The convenience of the technique, coupled with the important information that can be obtained, makes Raman scattering a valuable tool for physical-chemical analyses as well as for the study of physical phenomena."

Congratulations

Mr. and Mrs. Reggie Mitchell (8115), a daughter, Erika Gene, March 8.

Verne McNabney (8252) and Fay Walters, married in Castro Valley, Feb. 13.



LOU TIDWELL (9550) and MARGIE RICO (4231) work on map reading. Lou totes a portion of her field equipment. "The field trips aren't too bad, but those mountains are steep, and the pack is heavy," she says. Margie commented that climbing into and out of some of those large trucks isn't all that easy, especially in her dress uniform.

Continued From Page One

SOLDIERING

women in the unit and we share the work with the men. They don't pamper us; we all receive the same training and we help one another."

The Reservists also have a two-week annual training stint. In the past two years, they've trained at Camp Pickett, Va., and Camp Roberts, Calif.

Margie summed up their general feeling, "If you're really interested in doing something different — and all fields are open to women — the Reserve is the answer."



LAB NEWS photographer Bill Lasker has been keeping his camera eye open for bicentennial items and came up with this one decorating an Air Force vehicle. We've concluded the "You and me Babe" theme is an updated version of "Don't tread on me."

Where Is Hank Guttmann?

Acquaintances of Hank Guttmann (1222) may be wondering why they haven't seen him lately. Take a second look, friends. That agile fellow taking the stairs with ease in Bldg. 836 is the real Hank; that contented man seated in the cafeteria drinking a cup of black coffee is the real Hank; and that happy guy striding through the tech area is the real Hank. The real Hank Guttmann emerged after 14 months in Weight Watchers and a weight loss of 54 pounds.

"It's a great program," Hank says, "with a sensible diet and support and encouragement from the group. I've always been overweight; crash diets would take off a few pounds but soon I'd be back where I started. I procrastinated about doing anything that required energy; I envied athletic people; and I made excuses and jokes about my problem. I was psychologically weak. You know, there's a certain amount of childishness involved when you don't have full control over your habits. And what a revelation when you accept the fact that you need help and then go after that help."

New members of Weight Watchers have their "goal weight" determined from a combination of height, age and sex. They attend a weekly meeting consisting of weigh-in, lecture and discussion. Once the goal weight is met they continue the weekly meetings and a maintenance diet for 16 weeks. If they've maintained their weight during this period they become a "life member" and attend a meeting once a month.

"The diet certainly presents no hardship," Hank says, "in fact it's probably more food



THE TRIM Hank Guttmann (1222) and the shadow of his former self.

than most people normally eat. The program helps you to discard your fat habits and forces you to discipline yourself to reach for the right food. And when you're successful the self-image undergoes a beautiful change."

Recreation Notes

FUN & GAMES

Sandia Bicycle Assn. — Once upon a time a group of cyclists were encouraged by the State Highway Department to petition that agency for permission to ride upon the shoulders of interstate highways. Such a petition was collected, with many hundreds of signatures, and presented, and it has now been denied by one James Bird, State Highway Engineer. His letter is accompanied by a two-page legal opinion which says, in effect, that because you might run into a pothole on the shoulder and hurt yourself, you could then sue the Highway Department for negligence, and they don't want any more lawsuits than necessary. This is all in the context of interstate highways; but why the Highway Department wouldn't be equally liable in the case of ordinary state highways (where we can legally ride) isn't explained. It's of interest to note that the interstate provides the only connection between many New Mexico towns.

We've had 15 or so requests for literature on the April 25 Tour of the Rio Grande Valley (the 50/100 miler). Call LAB NEWS on 4-1053 if you're interested.

Fitness — The Harvard Medical School Health Letter for February has some interesting words on the subject: "Others register dismay and describe guilt feelings when confronted by the word (exercise) ... Exercise that enhances cardio-vascular fitness and stamina (versus strength or skill) must be a form of exercise that can significantly increase the pulse rate for a prolonged period of time ... (this includes) jogging, swimming,

rope jumping, stationary bike riding, etc. — anything that can be done without slowing down or stopping. Tennis, bowling, golf, etc., do not qualify."

Later in the Letter there's a discussion of pulse rate and exercise versus age. Call 4-1053 if you'd like a copy.

On to Russia — UNM's George Harutunian sends us changes in the charter flight dates of this trip, which includes Hungary and Czechoslovakia as well as Russia. The group will leave Denver June 8 and return to that city on July 7. They'll travel to Leningrad, Petrozavodsk, Novgorod, Moscow, Kiev, Odessa, Budapest and Prague, cost \$1393. Call George on 277-2434 or 298-2229 if you're interested.

The Coronado Club again invites nonmembers to their Outdoors Indoors event on April 5 at 7:30. This one is on boating places, tips, equipment, safety — and ends with a slide show on sailboating in the Sea of Cortez.

ENERGY SAVINGS

COMPARED WITH USAGE IN BASE PERIOD - JULY 1972 THRU JUNE 1973 CURRENT REPORTING PERIOD ENDING FEB 76

| BASE PERIOD 92276 MWH | 19.0 % | 1976 74787 MWH | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0 % | 19.0

1976 1998

VEHICLE MILES

BASE PERIOD 2468 MI

Luna Foils Frost

When a man of science is confronted by a trivial and mundane problem — like how to preserve his budding fruit trees from frost damage — he sometimes comes up with an intriguing solution.

"Basically I'm slothful," says Bob Luna of Environmental Research Division 5443. "Getting up in the middle of the night to put a blanket and a light bulb on my fruit trees isn't my idea of fun."

So Bob has ringed each of the threatened trees with three open-top containers, each holding about 35 gallons of water. The principle? Says Bob, "when the temperature drops to, say, 28°, I figure the water stays around 32 and, in effect, there's a plume rising from the water surface that warms the tree—somewhat. I think the system might work down to 26°, but not below that."

Does it work? Last spring Bob tried the water system and his trees bore fruit while those of his neighbors didn't. He quickly points out this is hardly conclusive proof, then adds, "but work or not, you do get a good night's sleep . . ."

Sympathy

To Dick (9484) and Bernice (1213) Vigil on the death of his mother in Santa Fe, March 1.

To John Melvin (1241) on the death of his mother in Tucson, Ariz., March 13.

To Gerald Goralczyk (1241) on the death of his father in Mt. Clemens, Mich.

To Jeanette Diamond (9424) on the death of her husband Lyle (Sandia retiree) in Albuquerque, March 24.

Congratulations

Robert (9712) and Dolores (LOA/3623) Aragon, a daughter, Amber Nicole, March 13.

NRC Chairman Testifies Before Joint Committee

Last month Chairman William Anders of the Nuclear Regulatory Commission appeared before the Joint Committee on Atomic Energy to respond to allegations about nuclear safety and the performance of NRC. Because of Sandia's increasing involvement in matters relating to nuclear safety, the Chairman's comments on the subject are of special interest. Here is an extract of those comments.

"The gist of our (NRC) position can be stated bluntly: While there is no such thing in our modern world as 'zero risk,' licensed nuclear power plants provide margins of safety for the public which place them among the lowest rungs of risk exposure."

"This brings me to the question, is NRC leveling with the public? First, let me stress that our review confirms that all of the technical issues the four engineers have raised in these hearings had previously been raised by our regulatory staff, by the Advisory Committee on Reactor Safeguards, or by participants in the licensing process. Each of these issues, regardless of how it arose, was already a matter of public record. The NRC is committed to giving the public the facts about nuclear safety, whether the facts are agreeable or not and we encourage frank expression of views."

"... each safety issue must be seen from the perspective of the overall NRC reactor safety philosophy, namely, defense-in-depth. This approach assumes that all defects will not be eliminated and that people will err and material will fail, despite our best efforts to the contrary. Also, we assume that nature will treat nuclear facilities in extremely harsh ways. Defense-in-depth responds to these conservative — some say unrealistic — assumptions by requiring that nuclear facilities be designed to:

- first, provide a large margin of safety for possible human error, as well as defects in materials and equipment and for acts of nature;
- second, provide backup systems that will compensate automatically for failure of essential equipment or human error that might occur in correcting any potentially unsafe condition;
- third, provide equipment to limit the public consequences of even highly unlikely accidents."

"Finally, the charge (against NRC) of economic bias is simplistic. The Atomic Energy Act mandates the NRC to regulate in the national interest. Unquestionably our basic mission is to assure that public safety is protected; but it is fully consistent with this obligation also to be mindful of the fact that unnecessary costs and unwarranted delays are not in the national interest. The reality is that our regulatory decisions can significantly affect the capital and operating costs of a large industry, and consequently the availability and cost of electric power to the consumer. We reject the thesis that recognition of the impacts of regulatory actions on costs, schedules and power needs makes impossible the unbiased decisions necessary to protect the public safety."

Take Note

Five speakers on fusion energy are scheduled in the next couple of weeks at UNM's Kiva as part of the lecture series, "Critical Materials Problems in Energy Production."

Dr. Frank Clinard (LASL) will discuss fusion insulator problems at 3:30 p.m. Thurs-

day, April 8. At 5 p.m., Dr. W. Wiffen (ERDA, Oak Ridge) will discuss bulk metal problems.

Laser fusion will be the subject on April 15. At 3:30 speakers will be Dr. A. Glass (LL-L) and Dr. A. Guenther (AWFL). Dr. Marvin Weber (LLL) will speak at 5 p.m.

For additional information, call George Samara (5130), 4-2945.

Next week the Cancer Crusade will be in full swing, and the entire metropolitan area will be canvassed by volunteers. Many Sandians already contribute to the Cancer Society through their membership in ECP, but everyone should accept and read the printed information being distributed by the Crusade marchers. If you don't know the seven warning signals of cancer, you should. The life you save could be yours or someone you love.

More people photos are still needed for the pictorial history of Sandia to be published this fall. We especially need candid (unposed) pictures of Sandians — on the job and off — from the '60's. All photos will be returned (though those chosen for inclusion won't get back to the owner for several months). Call Hawkinson at 4-7841 if you have some possibilities.

The Kirtland Base East Recycling Center is now located at the intersection of "M" and Texas Streets. The easiest way to find it: south on Wyoming to "H" Street; west on "H" to Texas Street; then south on Texas about four blocks to the center. There are receptacles for aluminum cans and glass.

* * *



LIKE a funeral cortege passing in review, good of Bldg. 610 rolls slowly past one of its successors on its way to that happy land where old tempos once again stand proud in the sun. At one time or another, the structure housed many Labs organizations (all of whom left it without regret). Contractor who bought the place has assured us that 610 will be put to noble purpose.

LAB NEWS Alum Becomes Patriot

Several issues back we carried a letter written from North Africa by Cherry Burns, a LAB NEWS staffer who left Sandia three years ago to travel extensively in South America and Africa. Cherry has recently returned to the States (and to Albuquerque) and, in her words, has been having a love affair with this country since her return. We discussed her conversion to patriot with Cherry (she had been a normal, mildly cynical citizen before), and this article, by her, is an outgrowth of that discussion.

Most of us don't think much about civil rights, human rights, or equality unless our rights are threatened. One automatically thinks of the Soviet Union or China in discussing lack of freedom, but the list of countries lacking the freedoms we take for granted is much longer than that.

During three years of extensive travel in South America and Africa I have had a number of personal experiences in which my civil rights as well as those of others were bent if not abused.

Most South American countries weren't much of a problem. They have women's lib movements, strong labor groups, and vigilant authorities. The exception was Chile, which I visited six months after the military coup that overthrew President Allende. No warning was given at the border as to what one could or could not do. A "state of emergency" still existed which meant searches without warrant, general suspension of other civil rights, and nightly curfews. After the designated hour, the enforcers shoot twice to warn a person breaking curfew, the third shot counts. In some areas where there had been recent anti-government activity the curfew was as early as 8 p.m.

In one small town near Santiago I was apprehended by the Intendencia (military government) for taking a photograph of what looked to me like a fushia-colored tree next to a deserted blue adobe house. How would I know that the building was previously the Allende party headquarters in this village and supposedly was a "sensitive" photo subject? My passport was taken and my film was confiscated. But when the military authorities presented a paper (written in Spanish) for me to sign, I suddenly found I was charged with having been apprehended on suspicion of photographing the Intendencia headquarters (a similar shabby adobe with sand bags forming a protective wall extending into the road). Photographing military installations in any country is taboo. I refused to sign. After nearly two hours of haggling, a prominent Chileño who was with me offered to sign as being responsible for me and my actions. Not until then was my passport returned. Apparently someone had second thoughts when the report reached Santiago because the film cassette, unprocessed, was returned to me six months later.

Political disorder is presumably a valid excuse for suspension of rights, as I found out in Buenos Aires when I wanted to attend the big labor day rally which President Peron would address. I was frisked by police at least six times en route to the Plaza de Mayo. Once I joined the 100,000 Peronistas at the Plaza it was a matter of waiting for the action. The rightists and the leftists soon got into it and

about 90 were injured. I found a safe deep doorway near an ambulance and intermittently ducked behind a handsome Argentine. One must be selective about company in potentially dangerous situations.

Throughout South America, this being 1973-74, there was great interest in the Watergate hearings, and the majority of comments dealt with how the investigation had emphasized freedom of the press in the U.S., the operation of the three arms of the government, and the fairness of the U.S. judicial system.

Freedom of the press? Well, it was a long time before I saw another free press—certainly not in South Africa. The broadcasting system and the TV station which began operation in January are both operated by the government, and there is also strict censorship of newspapers, books, and movies. Upon arrival in Cape Town the first thing the Customs Official asked me was, "Have any dirty books?" PLAYBOY magazine may be considered tame compared to other publications found in any U.S. drugstore, but it's considered porn in South Africa.

Of course, under the policy of apartheid (racial separation) it was illegal for me to mingle socially with "non-whites." I could attend a Malay wedding as an invited guest, but I could not visit a Malay family at their home. The apartment house where I lived was for whites only - the Japanese Consul who also lived there was deemed an "honorary white" owing to his diplomatic status. Nonwhites in South Africa cannot own their homes, nor live where they wish, nor aspire to a well-paying job (they're reserved for whites, many of them immigrants actively recruited to fill vacancies), nor belong to a labor union, nor receive the same pay as a white for comparable work, nor vote. Anti-government viewpoints bring threat of violating the Securities Act.

To travel in Africa an American needs a passport and a visa from every country to be visited. The only country that doesn't require a visa is Malawi, and they almost didn't let me in. I was prepared to comply with their law that says it is illegal for a woman to appear in public in a dress that does not completely cover the knees (the offender is held in jail until the court hearing which may set the fine at \$250), but I wasn't prepared for being told at the airport that my entry was contingent upon my seeing the President's Director of Information "first thing in the morning." So I went. The problem was that I had listed my profession as "writer," and President Banda had recently had a tiff with Swedish writers. We talked and decided that if my profession were changed to "research assistant" that would be non-objectionable.

Getting a visa isn't always simple. If you have South African or Rhodesian visas or entry stamps in your passport, chances are that the Black African countries won't let you in. If you have been to Israel and it shows in your passport, you're not welcome in Arab countries. It all takes a bit of planning. Even so, U.S. citizens are fortunate in being able to easily obtain a passport. In many African countries this is a privilege, not a right.

Mozambique was six weeks from official independence from Portugal when I arrived and there was an air of expectancy. On



Cherry Burns

highways, Frelimo soldiers made frequent checks. I was told that Old Spice after-shave containers and battery powered hair dryers were unofficial "no-no's." To the native fresh from the bush, one resembles a hand grenade and the other an exotic weapon. My problem was different. I felt a nationalized bus service had an obligation to deliver passengers to their destination; instead, I was dropped 12 miles from mine. Looking at the 50-some natives at the same crossroads with their immense bundles, I didn't see anyone to complain to. But one must be confident that a knight in shining armor will come to your rescue. It took 15 minutes, and he wasn't exactly a knight, but he had a load of oranges for my hotel and offered me a ride in his battered pickup. Along the way we passed through two road blocks. At the first we lost about 10 kilos of oranges in payola, at the second we gained two passengers - Frelimo soldiers with sub-machine guns. I felt my arrival at the hotel was impressive.

In Rhodesia Army trucks and soldiers in camouflage uniforms are everywhere. The Tourist Office was a little shocked when I said I wanted to visit a friend's farm in the Centenary district, but I couldn't find the place on the tourist map. No wonder, it's not a place for tourists! It is a center of terrorist activity. When my friends visit neighboring farms (daytime only), they drive with loaded pistols on their laps; the farm roads have been strip paved to prevent driving over mines; farms in Centenary have 24-hour security guards and are on a "hot line" to the military.

Things were quiet politically when I arrived in Ethiopia, although I had been forewarned by residents about problems to be expected in entering and leaving the country (none of which materialized). The military government which overthrew Emperor Haile Selassie was observing its first anniversary with a parade. It seemed like half of the country was there to watch and the other half was marching in the labor units. Due to military activity one could not visit Asmara, the country's second largest city, without special permission and valid reason, and internal flights were frequently cancelled. One was frisked and belongings searched before entering any public building such as the post office and banks. Two weeks later a "state of emergency" was declared in Addis Ababa and surroundings to "crush reactionary elements," and all civil rights were suspended. The searches were extended to include hotels. I felt that more than my rights were involved when a bomb exploded a block from my hotel one morning at 6 a.m. The city's telecommunications center was badly

As soon as the airport was again open for international flights I moved on to the Sudan: it was a month since their last coup attempt and conditions were relatively stable. Only their trains broke down.

It was back to pat and peek in Israel. On the train between Tel Aviv and Haifa two armed soldiers came through and checked every parcel and suitcase to make certain it had an owner. No owner and I suppose the items would have been chucked out of the window, hopefully before the bomb exploded. I spent several days at a "kibbutz" (government-sponsored commune) near the Lebanese border. It was more like a prison than any place I'd previously been. High barbed wire fences, guard towers manned 24 hours a day, submachine guns in homes and public rooms. Those frolics in their fields mentioned in "Exodus"? Forget it! Anyone leaving the compound whether for work or pleasure had to be accompanied by an armed person. Of course these measures are protection against terrorists and not truly restriction of rights; nevertheless they do limit one's freedom.

Call it civil rights, human rights, equality, freedom of movement or whatever it is we Americans enjoy — after three years abroad I can assure you it's a rare commodity over there.

LAB NEWS PAGE SEVEN APRIL 2, 1976





FROM '38 to '76 is a long time in any man's Army. Bill Jackson (3644) has recently retired as a Chief Warrant Officer in the Army Reserve. Uniform experts will note, however, that the young man on the left is a PFC in the Marine Corps. Seems that Bill started in the Marines, later tried the Air Force and Navy, and settled down in the Army. The young Bill was photographed in 1941 in Guantanamo Bay, Cuba.



ROYAL CHAPARRALS, a 40-member square dance exhibition group including Marilyn and Fred (9341) Stixrud and Vi and Glenn (4336) Folkins, will perform at the National Square Dance Festival in Anaheim, Calif., June 24-26. To help with expenses, members are selling raffle tickets for an expense-paid vacation for two to Anaheim, home of Disneyland. The group will also perform at the New Mexico State Square Dance Festival in Las Cruces May 7-8.



IT'S SPRING? You could have fooled the grass in front of Bldg. 800 earlier this week — something covered it that was white, soft, and wet and usually followed by little boys on sleds.

fiete Miback

To get a response to your comments and questions about Sandia Labs, complete a Feedback form (available near bulletin boards) and return it to the Feedback administrator. The substance of questions and responses of wide interest is published in LAB NEWS.

Q. The unpaved area east of Bldg. 814 (Benefits & Lab News) is a handy parking area for many employees and is being used more and more. The only trouble is, the area is littered with rusty nails remaining from the razing of Bldg. 818. Is it possible to "sweep" the area with a big magnet, like the one that used to be in service at Sandia?

A. We appreciate your calling our attention to the need for a magnet to pick up nails around Building 814, and this has now been done.

It may also interest you to know that there are plans to do a limited amount of landscaping and to designate parking areas around Building 814 in the near future.

- R.E. Hopper - 9700

Q. According to my supervisor, lighting intensity is still well above the minimum acceptable level in most of Sandia's office areas. Are there any plans for increasing our energy saving by turning off more lights?

A. Significant lighting reductions have been accomplished by requesting the Departmental Energy Monitors to survey their areas and request that fixtures be taken out of service or reduce lighting levels when not required. This voluntary action is still available to Department Managers through their Energy Monitors. In addition, hallway and equipment room lighting has been reduced by the Plant Engineering Organization. The task of studying each lighting area and turning off every light that is not over a work task and reducing overall lighting levels is enormous. Funds are not available for the additional engineering and construction contracts necessary to accomplish this goal at the present time. A budget request was submitted to ERDA in August 1975.

The Plant Engineering Organization is reducing light level as appropriate when moves and rearrangements are designed. In addition, individual buildings are being investigated as time permits. A test area in Building 880 is under design for consideration at the present time.

- R.E. Hopper - 9700

Q. At 880, the visitors' parking slots are usually filled by Sandia decal vehicles. I had some bona fide visitors recently who had to park, finally, near the water tower. Can't something be done about the all-day parkers who are employees?

A. Controlling the use of visitor parking spaces is a never ending problem. As you have noticed, some Sandia people park in the visitor spaces. Spaces for "Employees on Official Business" are provided and are to be used for short periods of time when the Sandia employee is visiting that particular area. Tickets are given for illegal parking in the visitor spaces and the employee's supervisor is notified. When an individual persists in parking illegally, the tickets are referred to higher level of management until the problem is resolved.

Unfortunately, due to manpower requirements, Security is unable to maintain a regular patrol of the parking lots and to a large extent must rely on employees reporting chronic offenders.

- L.J. Heilman - 9500

Q. Does the 15-MPH speed zone near the school apply to the full distance between the sign "15-MPH" and the sign "End of School Zone" or does the 15-MPH limit end after you go through the intersection?

A. The 15-MPH speed zone on Main Street (Wyoming) by the elementary school applies from the speed-limit sign to the sign indicating the end of the school zone. The speed zone applies only when the yellow light is flashing, as indicated by the signs. Those individuals who resume a speed of 25 MPH before they reach the end of the school zone will, sooner or later, have a confrontation with the Base Security Police.

- L.J. Heilman - 9500

Q. Before ordering capital equipment, a Property Search must be conducted to see if the equipment is already available in-house. This takes a lot of time and has not once turned up the desired item. Is the Property Search worth the effort?

A. ERDA requires its contractors to maximize the use of facilities, space, equipment, etc. In support of this policy, we instituted the use of the Property Search Request (PSR) as one means of preventing equipment acquisition if available equipment is on hand.

Requesters specify the period of need and, if lease or substitution is acceptable, the request is filled accordingly. If the user rules out all other options, the only alternative is to purchase. When time permits and equipment is available to other government agencies, Property Management arranges for nonbudgetary acquisition.

Your "Feedback" is timely as it is almost concurrent with Property Management's procedures instituted in November to record and evaluate all equipment requests. Heretofore it was not possible to determine the number of requests actually filled through the use of the PSR. Within six months we will evaluate the effectiveness of the PSR and make recommendations accordingly.

C.R. Barncord - 3200

Authors

G.A. Samara (5130), "Effects of Pressure on the Dielectric Properties of and the Vanishing of the Ferroelectricity in SbSI," Vol. 9, 209-219 (1975), FERROELECTRICS.

R.W. Rohde and T.V. Nordstrom (both 5832), "Reply to Comments on 'Stress Relaxation of a Copper 1.87 wt % Beryllium Alloy'," Vol. 22, 95-96 (1976), MATERIALS SCIENCE AND ENGINEERING.

R.S. Berg and G.J. Kominiak (both 5834), "Surface Texturing by Sputter Etching," Vol. 13, Jan./Feb. 1976, JOURNAL OF VACUUM SCIENCE AND TECHNOLOGY.

H.T. Weaver (2354) and W.J. Camp (5151), "The Detrapping of Interstitial Helium in Metal Tritides - NMR Studies," Vol. 12, No. 8, PHYSICAL REVIEW B; H.T. Weaver and R.M. Biefeld (5154), "Nuclear Resonance Study of Lithium Motion in B-Eucryptite (LiAlSiO₄)," Vol. 17 (1975), SOLID STATE COMMUNICATIONS; H.T. Weaver and J.E. Schirber (5150), "Evidence for a Conduction Electron Transition in CeP and CeAs," Vol. 13 (1976), PHYSICAL REVIEW B.

B. Stiefeld (1736), "NDT and the Ubiquitous Digital Computer," Vol. 3, No. 3 (1975), ASTM Standardization News, Special Issue on Nondestructive Testing; B. Stiefeld, "An Interactive/Graphics General-Purpose NDE Laboratory Tool," Vol. 63, No. 10, Proceedings of the IEEE, Special Issue on Laboratory Automation.

J.P. Van Dyke and W.J. Camp (both 5151), "The Spin-S Ising Susceptibility on the Triangular Lattice," Vol. 12, 1084 (1975), PHYSICAL REVIEW B.

R.K. Quinn (2516), "Rotating Ring Disk Electrode Studies of the Electro-chemistry of Aromatic Carbonyl Compounds in the Solvent Sulfolane," Vol. 122, 615 (1975), JOURNAL OF ELECTROCHEMICAL SOCIETY; R.K. Quinn and H.T. Weaver (2354), "Magnetic Susceptibility and Nuclear Resonance Studies of Tb Y₁-xP," Vol. 16₈ No. 2 JOURNAL OF SOLID STATE CHEMISTRY.

R.G. Kepler (5810), "Piezoelectricity and Pyroelectricity in Polyvinylidene Fluoride," p. 167, PHOTOGRAPHIC SCIENCE AND ENGINEERING IOURNAL

OURNAL.

A.R. Shouman (formerly 1543) and A.B. Donaldson (2513), "The Stationary Problem of Thermal Ignition in a Reactive Slab with Unsymmetric Boundary Temperatures," Vol. 24, 203-210 (1975), COMBUSTION AND FLAME.

E.H. Beckner (5200), "Fusion, Nuclear," contribution to THE 1975 MCGRAW-HILL YEARBOOK OF SCIENCE AND TECHNOLOGY (1975).

L.E. Baker (5718), A.B. Campbell (9425) and R.L. Hughen (4353), "Geothermal Well Logging: An Assessment of the State of the Art," Nov.-Dec. 1975, THE LOG ANALYST.

R.E. Cuthrell (5834), "An Evaluation of Amalgamated Metallic Surfaces for Reducing Friction, Contact Resistance, and Wear in Electrical Contact Applications," PHP-11, 114 (1975), Transactions of the IEEE; R.E. Cuthrell, "Design Implications of Prow Formation During Electrical Contact Closure," PHP-11, 110 (1975), Transactions of the IEEE.

M.L. Lieberman (5731), R.M. Curlee (5825), F.H. Braaten (3623) and G.T. Noles (5824), "Development of CVD/PAN Felt Carbon/Carbon Frusta," Vol. 9, October 1975, JOURNAL OF COMPOSITE MATERIALS.

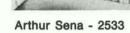
R.A. Graham (5131), "Inherent Time Delay for Dielectric Breakdown in Shock Loaded X-Cut Quartz," Vol. 46, 5300-5301 (1975), JOURNAL OF APPLIED PHYSICS.

J.A. Panitz (5114), "Surface Characterization by Single Atom Mass Spectroscopies," Vol. 5, No. 2 (1975), CRITICAL REVIEW IN SOLID STATE SCIENCES.



THE KIRTLAND BASE LIBRARY has reopened in a new location in Bidg. 204 (east of the Base service station). Sandia employees are eligible for library cards. Operating hours are Monday through Thursday, 10 to 9 p.m.; Friday, 10-5; and Saturday, 1-5. The larger facility has enabled the library to expand from 30,000 to 55,000 volumes. A formal dedication will be held April 5, the beginning of National Library Week.

MILEPOSTS LAB NEWS April 1976





Jim Leonard - 5712



Matt Bustos - 9721

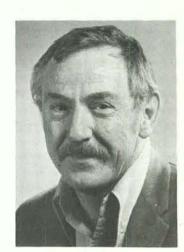


Bob Reese - 8332



Ben Bright - 3617

10



Dick Petersen - 9412

30



Helen Melancon - 3251 25



John Pupelis - 9622



Roberta Rainhart - 2521 10



Bob Humphrey - 8158



25

Cid Dalin - 3172



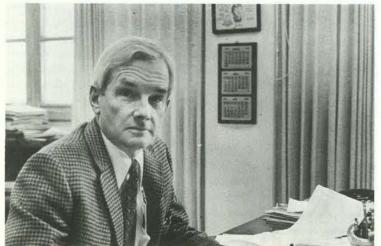
Chuck Cockelreas - 3153 15



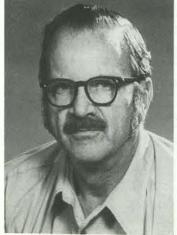
Mike Michnovicz - 9632



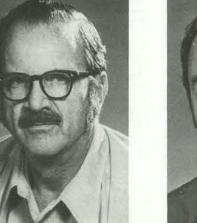
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Dick Claassen - 5800



John Dobias - 2523



25



Ernest Niper - 1253



Edward Barber - 2356



Jack Martinell - 8345



Robert Luikens - 1321



Don Hosterman - 4232



Bill Kraft - 9510

20



Helen Walsh - 5800







Tom Mead - 9550



Roy Ramsey - 9553

25

15



Mickey Banfield - 8433 10



Mo Jones - 8168

Don Harrison - 3282

25



Phil Bircher - 9532



Willard Clark - 2150

25





25

Cecil Lang - 9473



25

Richard Duran - 9721

Gene Romero - 9550



Everett Gourley - 9550



Fred Mitchell - 3224



Billy Hickerson - 4322



Credit Union Reporter

By Otis Cox, Education Committee Chairman

1976 Officials and Committees

Board of Directors

Members of the Credit Union Board of Directors are: Clarence Sandy, 9533 (President); Otis Cox, 3223 (Vice President); Bill Bristol, Credit Union General Manager (Treasurer); Earl Simonson, 4152-3 (Secretary); Mollie Miller, 3321; Alan Pope, 1400; Willie Garcia, 3321; Don Wagner, 8212; Bill Olheiser, retired; Joe Maldonado, 9713-4; and Marvin Daniel, 2115.

Committee Chairmen appointed by the President for 1976 are: Executive Committee, Bill Bristol; Operations Committee, Earl Simonson; Education Committee, Otis Cox; and Security Committee, Willie Garcia.

Credit Committee

The Credit Committee members are: Ralph Campbell, 3171 (Chairman); Molly Raisen, Credit Union Office Manager; and Benny Garcia, 212.

Supervisory Committee

Supervisory Committee members are: Joe Ruggles, 2625 (Chairman); Ron Bodo, 3221; Bob Luna, 5443; and Dan Held, 8213.

Dividend

The Board of Directors at their regular meeting on March 17 declared a first quarter dividend for 1976 at a 6 1/2 % annual rate. This dividend, the same rate as that for the past six quarters, will appear as a memorandum item on members' quarterly statements to be distributed about April 10.

New Auto Loans

Effective April 1 the maximum term on automobile loans is 48 months for new, current calendar year models and subsequent year models. Used car loans continue with a maximum term of 36 months.

Safe Deposit Boxes

Safe deposit boxes at the Credit Union (Albuquerque and Livermore) are still available in most sizes.

Federal Examination

Examiners from the National Credit Union Administration made their annual supervisory examination during the week of March 8. The examiners' objectives are to determine:

- 1. The degree to which financial transactions are acceptably recorded.
- 2. The extent of compliance with applicable laws, regulations and sound credit union operations.
- 3. The financial condition of the credit union.
- 4. The fitness of management and soundness of policies and procedures.
- 5. The degree of risk, if any, to the insurance fund.

We are happy to report that no areas of concern were noted and your Credit Union continues to enjoy a strong and healthy financial condition.

JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

CLASSIFIED ADVERTISING

RULES

- Limit 20 words.
 One ad per issue per category.
 Must be submitted in writing.
- Use home telephone numbers.
 For Sandia Laboratories and ERDA employees only.
- No commercial ads, please. Include name and organization. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

GOAT, neutered male, 2 yrs. old, white mohair, pet or complement to BBQ sauce, \$35 or best offer. Hawkinson, 281-5239.

TYPEWRITER, Olympia portable, \$65; rollaway bed & mattress. Pitti, 256-1629.

DISHWASHER, Frigidaire portable, coppertone with wood top, \$60. Harstad, 298-6551.

SECTIONAL COUCH, 2-piece, opens into 2 twin beds, \$75 or best offer over \$50. Grimes, 299-2548.

HOPE CHEST, round top, cedar lined, hand-made, Mediterranean style, \$200. Baca, 247-9804 or 243-4371.

ROLLAWAY BED, innerspring mattress, twin size, \$20. Detorie, 299-1868 after 5.

SWIMMING POOL, Sears aboveground, 31' x 16', filter, heater, cover, vacuum, decking, needs liner and filter motor pump, \$300. Strege, 247-3065.

GOLF CLUBS, 1974 Titleist irons 2-PW, D3, R shaft. Adams, 881-6836.

PINTO GELDING, 9 yrs. old, 15H1, \$400. Mehl, 345-1076.

WASHTUBS, porcelain, double, with faucets and stand, \$8; old theatre chairs, 3 for \$10. Guttmann, 243-6393.

KEESHOND PUPPIES, AKC registered, male and female, championship lines, 5 weeks old. Rose, 298-4849.

ACCORDION, 120-bass, 41-key, case, \$100. Smith, 299-6873. ACCORDION, 120 bass, case; sewing machine. Johnson, 344-9369.

YOUTH SADDLE, all leather, used once, \$50. Chinn, 296-

REFRIGERATOR, Sears, 17 cu. ft., 1974 Coppercolor, \$275. Calloway, 293-5443.

LAWN MOWER, reel type, Penneys deluxe with catcher, 1 year old, \$25; high chair with metal tray, \$10; pottychair, \$2. Paul, 299-6387.

74 TRAILER, Apache Ramada, elec. brakes, solidstate, stove, ice chest, awning, sleeps 8, no furnace, \$2000 firm. Still, 299-8825.

ENLARGER, 35mm, Durst RS35 w/50mm, f/3.5 Vivitar lens, \$40. Janney, 881-4622.

UMIDIFIER, Sunbeam port. elec. deluxe model HU-2, walnut color, \$20; coffee table, modern, walnut, w/magazine storage, \$45. Ristine, 298-8383.

REDWOOD picnic table; chair; loveseat; green shag rug, 15x12; 3 bar stools, 24". Kelly, 255-7226.

SEWING MACHINE w/cabinet, 30 cams, twin needle, new \$200. Archuleta, 345-5071.

GARRARD turntable, 4-spd., walnut base, \$25; Oneida stainless, My Rose pattern, service for 8 plus extra serving pieces, \$15. Bear, 881-7128.

CAMPER SHELL, off short bed Chevy pickup, paneled inside, for side step or fleet side, \$175. Carroll, 266-8926.

SKIS, Head 360, 210 cm, \$20: boots, Humanic buckle, men's 111/2M, \$20. Bennett, 298-1142.

PAIR 750-16 truck tires, some tread, both recappable, \$8/pr.; porcelain lavatory sink, \$5. Freyermuth, 299-2053.

SOFA & matching chair, Early American, need covering; crib & mattress; girl's 26" bicycle; Lane coffee table. Linnerooth, 299-6154.

CORNER UNIT for sitting or '73 PINTO Runabout, 4-spd., AC, sleeping, \$150; encyclopedia Britannica, about 10 yrs. old, \$50. Singleton, 299-1613.

SEARS 9" radial arm saw w/ stand, \$85. Gunderson, 298-2133.

TWO G78-15 tires, Sears "78"

Silent Guard, 35,000 mile guarantee, new cost \$64, sell for \$40 ea. Stamm, 255-2640 or 255-2288.

POKER TABLE, \$25; elec. dryer, \$35; 17" TV w/stand, \$30; elec. rotisserie/broiler, \$30; girl's formals size 10, \$7.50. Scott, 299-7893.

YASHICA 35mm camera LYNX 5000, 1.8 lens speed from 1/1000 second, built-in light meter, \$45. Slesinger, 299-

HI-FI equipment, Garrard turntable; Harmon-Kardon Citation and Heathkit W-2 amplifiers & preamps, tube types. Auerbach, 296-1489.

GIBSON upright freezer, 16 cu. ft., capacity 560 lbs. on 16.5 sq. ft. of shelving, \$250; vinyl covered reclining chair, \$25. Bunce, 821-5337.

WHEELCHAIR, used 2 weeks, was \$154, now \$100. Rush, 296-3136.

REFRIGERATOR; hair dryer; stereo console w/AM-FM radio, best offers. Boes, 262-

TRANSPORTATION

MULE, ride & pack, 14-2 hands, 1000 lb., gentle, \$300. Aubuchon, 865-7790.

'74 YAMAHA Enduro DT-125A, \$450; Schwinn 10-spd. Continental bike, green, \$70. Baczek, 255-3429.

'74 YAMAHA Enduro 100, street or dirt, \$450. Minor, 299-1968. BICYCLES: Men's Sears 3-spd. Touring, thorn-proof tubes, \$55; girl's American Flyer, 24' wheels, thorn-proof tubes, basket, \$40. Jones, 299-6542.

'71 STERNCRAFT boat, 21', 140 hp I/O, tandem trailer, Hansen, 898-3173.

1 HONDA 450, customized, new engine, \$800. Sanchez, 877-5381 after 5:30.

stereo tape, snow tires, \$1700. Fredlund, 281-3576. '56 FORD, V8, two-door, std.

'73 HONDA 350-4, list \$991, wholesale \$693, sell \$700. Hiltunen, 6500 Cochiti Rd. SE,

Space 56

'70 DATSUN 510 wagon, \$850. Prevender, 299-5253. 56 WILLYS JEEP pickup, 4-cyl.,

extra tires. Arning, 256-9229. '68 BUICK Electra, 2-dr., HT, R&H, all elec., \$500. Goode, EX-SF/and or ex-airborne 864-8262.

75 HONDA CVCC 4-spd. sedan, AM radio, front disc brakes. front wheel drive, \$2499. Schubeck, 294-5666.

'73 RED VW BUG, new tires, AM-FM radio, \$1950. Stamm. 255-2640, 255-2288.

62 DODGE 3/4 ton pickup, 200 SIX-GAL. GAS TANK for 1970 series, 318-V8, overloads, extra gas tank, \$750. Sutherland, 1312 Espanola NE, 266-1734.

'75 YAMAHA RD-350, windshield. fairing, bags, crash bars, rack, back rest, helmet box, 600 miles, make offer. Campbell, 268-8445.

'57 CHEVY, new rebuilt engine, tuned header w/dual exhaust. 4 new tires. Boeck, 298-6495.

'72 VOLKSWAGEN 7-pass. bus, low mileage, newly rebuilt engine, \$2850. Schwentor, 251 Gene NW, 344-0498.

'72 HARLEY DAVIDSON Sportster, XLCH, 16,000 miles, 1000 cc, 63hp, 6"-extended fork, king-queen seat, extras, \$2300. Weber, 266-9100.

MATCHED SET 175cc trail bikes, less than 1000 miles ea., \$550 set or \$300 ea. Smith, 268-2869.

'65 BUICK Wildcat, MacGibbon, 6408 Kiowa NE, 881-1657.

REAL ESTATE

1/2-ACRE mobile home lot, 2" well, all utilities available, off Highway 47, Los Lunas area, \$4995. Smiel, 865-9081.

TRAILER LOT at Meadow Lake, Valencia County. Owens, 298-6951

value \$7000 ea., will sell individually for \$5250 or \$10,000 together. McMaster, 296-

trans., \$120. Smiel, 865-9081. 3-BDR, HOUSE, Princess Jeanne area, near schools, work; pay equity to 434% GI or refinance. Shaut, 299-8569.

WANTED

5-PIECE DRUM SET for beginning student, must be very reasonable. Pafford, 298-8913 after 5.

qualified personnel in the following MOS: 11B, 05B, and 91B. Wagner, 299-9594.

SOFA BED & push-type lawnmower. Detorie, 299-1868 after 5.

EXERCISE BENCH, weights; Life magazines of pre-1946. Prevender, 299-5253.

60HP Evinrude outboard. Ashland, 299-3267.

INFO from anyone retrofitting existing home for solar space or water heating. For LAB NEWS article. Hawkinson, 4-7841.

STUDENT'S desk. Kohut, 296-

DuBOIS, Fisherman's Handbook of Trout Flies, \$15 for a copy binding & paging intact. McGarr, 902 Rio Vista Cr. SW.

'68, '69, '70, General Motors small or mid size 4-dr. sedan, w/PS & factory air, low mileage. Adams, 256-7265.

PRESTO-LITE "B" tank for acetylene. Wilkinson, 299-8327

ESTABLISHED FRUIT TREES. Boes, 262-0750.

FOR RENT

SUBLET 2-bdr. furnished apt., May 1-Sept. 1, \$101/mo elec. & telephone, 4337 12th NW, Apt. B, 344-3961, Guidry or 344-4419, Gregory.

NEAR BASE, all brick 3-bdr. house, 134 bath, walled yard, storage shed, covered patio, \$285/mo., \$200 D.D. Johnston, 265-8618.

LOST AND FOUND

COCHITI LAKE LOTS, present LOST-Fetish-choker, keys on ring, It. red jacket, grey suede gloves, suit belt, men's Longine watch.

FOUND-circular earring w/pearl, blue key, money order, road runner pin. LOST AND FOUND, Bldg. 832, tel. 4-

FIESTA • C-CLUB • EASTER EGGS • YOLANDA • BOATS • PRESTIDIGTATION • GREECE

FRIDAY	SATURDAY
2 — HAPPY HOUR FRIED CHICKEN BUFFET Adults \$2.75 Under 12 1.75 NATURAL PERSUASION Denny In Lounge	3 — VARIETY NIGHT Tal's Magic Show THE MISADVENTURES OF MERLIN JONES Food @ 6 Show @ 7 Free To Members
9 — HAPPY HOUR ROAST BEEF BUFFET Adults \$3.25 Under 12 1.92 THE NIGHTLIFERS Yolanda In Lounge	10 — SOUL SESSION 8:30 - 12:30 MIDKNIGHT SPECIAL Members Free Guests \$1

TRIED — tottering home to the TV after work every Friday? Tired of it? Join the club. Then, join the Club. Alone or with spouse/friend, Friday Happy Hours are the greatest way to relax since hammocks. Tonight, lots of socializing plus a fried chicken buffet plus Natural Persuasion for dancing. Finally, Traffic's answer to John Denver: Denny. Far out!

TO — give your Adam's (or Eve's) Apple some pleasant exercise next Friday, it's Roast Beef au jus with all the trimmings. Then you'll mutter "Go, mango!" as the Nightlifers make dancing plum delightful. And, later in the Lounge, it's Yolanda at the pear-shaped piano with the pear-shaped tones. She's a peach. Bring the apple of your eye — you'll be top banana, whether you're a papaya or a mamaya.

PAY — for your swim ticket now and you'll be ready for a summer of swimming in the pools, tanning on the lawns, relaxing on the patios.

MY — traveling friends say: 1) If you're waiting to sign up for Greece fine, but if you want one of the optional cruises of the Aegean Islands, sign up now or only the Royal (\$\$\$) Suites will be available; 2) Still seats left for Hawaii; final pre-trip meeting for signers-up for Hawaii and Tahiti at 7:30 on the 14th; and

I HEAR YOUR NEW OFFICE IS PRETTY SMALL. SMALL! THAT PLACE IS SO TINY WE HAVE ONLY ONE LIGHT FIXTURE. AND IF WE USE A RIG BUILB IN IT SCORCH ALL FOUR WALLS! 3) Two choices open for the Las Vegasbound: go May 19-21 and stay downtown; go May 21-23 and stay on the Strip. My traveling friends speak cryptically.

TAXES — the credulity, young Tal does. He's the perplexing prestidigitator whose fiveperson magic show will delight you come Variety Night tomorrow. On the silver screen, The Misadventures of Merlin Jones, which shows what scrapes an ex-Mouseketeer (Annette Funicello) gets into when postpubescent.

WITH — boating season upon us, let's take care our boats aren't. But boating safety is only one of the aquatically oriented attractions coming up at "Boating Is Beautiful" on the 5th at 7:30. A slide show of sailboats off Baja is fantastic — yacht to see it! Open to all Sandians and ERDAns, the Outdoors Indoors series is guaranteed to make one Monday a month something to look forward to. And this one's free.

A — year of spectator sports designed for the mind of the athletically inclined awaits any C-Clubber who tries out for the Wolfpack team. The Pack welcomes all those who are crazy about the Lobos - check out their lunatic fringe benefits at the meeting on the 6th at 7:30.

SMILE — at the superiority of your stitchery, Sanadoes. That's the end result of the inspiration you'll get from Jacqueline Enthoben, Excellent Embroiderer, on the 6th

at 10 a.m. Bring one of her books (from B. Dalton's) and she'll autograph it for you. Prices for the coffee have been reduced — \$2 for members, \$2.50 for guests. Reserve today.

BUT — even if they can't spell, they sure can make music. Yes, Midknight (sic) Special is back to do it right at Soul Session on the 10th.

THEY — are invited to be excited and delighted at the Easter Egg Roll and Hunt at 10 on the 17th. "They" are the six-and-under crowd, and they'll compete for prizes by age groups. Parents — be there to egg them on. Free to members; membership cards will be checked at the door.

DEMANDED — by the Club membership: another great Mexican Fiesta. That's the kind of demand it's great to meet — and to eat. All those good Mexican dishes (with Mexican foods heaped upon them); a complimentary hors d'oeuvres bar at cocktail time, featuring a chili tray that'll set you free; strolling and singing by the Mariachi Nuevo Tatatio; danceable stuff from and by The Progressions, a Mexican ranchero band with one fine female singer. Tickets are \$5.25 (guests \$5.75); pick them up (the tickets, not the guests) by the 10th.

MONEY — is what you save lots of when you buy discount tickets for Commonwealth theatres at the Club Office. Save 75¢ a seat.

MORE INFO — 265-6791.



DING-DONG - Rae Jackson (CPS and 5100) announces the theme of the Secretaries Workshop sponsored by The National Secretaries Association (International) at Four Seasons on April 24. The Workshop features professional communicator Frank Sentry of Los Angeles. Call Rae for registration

For Secretaries

Secrets of a Professional Communicator

"It's not what you say — it's how you say it." Okay, but how should you say it? As good an answer as any comes from professional vocal consultant Frank Sentry who will spend April 24 leading a workshop for secretaries at

the Four Seasons Inn.

The workshop, "Let Freedom Ring," is the climactic event of National Secretaries Week 1976. Sentry's program is entitled "Techniques of 'People to People' Communication." He's a recognized authority in the vocal communication field: executive producer-director of training films, industrial films, and commercials; consultant in TV performance, executive speech, and speaker training.

National Secretaries Week opens with a Secretaries Social hosted by — and held at the Albuquerque Inn after work on April 19. The Social includes refreshments and a chance to learn about The National

Secretaries Association (International), the organization sponsoring National Secretaries Week.

Sandwiched between the Social and the Workshop is April 21 — National Secretaries Day. No special events are planned; each secretary is on her/his own.

For an invitation to the Social, call Kathy Hicks at 247-4101, Ext. 214, or 296-3829 immediately. Registration for the 7:30 a.m. to 4:30 p.m. Workshop closes April 14. The \$10 fee includes attendance at all the sessions and lunch. Get registration forms by calling Rae Jackson, CPS (5100) — she's General Chairman of the Workshop and First Vice-President of the local chapter of The National Secretaries Association (International) — at 4-4660. The Association's overall goal: to promote and develop a high degree of secretarial proficiency and professionalism.